

has received the approval of the *Times*. "In fact," that journal concludes, in a leading article on the speech, "if the objects proposed by Prof. Müller for attainment are desirable in themselves, there ought to be no difficulty in obtaining funds for the purpose. In view of what the Commissioners have sanctioned in principle for one College at least in Oxford, it can hardly be said that the objects aimed at are either very visionary or very far in advance of public opinion. If Prize Fellowships may legitimately be used for the purpose of giving some men a start in ordinary life, it is difficult to see why they should not also be used, within reasonable limits, for giving others a modest provision for the pursuit of a learned career."

Why not? every one is likely to repeat except those who imagine they have a vested interest in being supported in idleness on what is really the property of the nation. By so doing, the university would once more make an approach to what it was intended to be, a really national institution. The change would incommode none but idlers, and those who have at heart the real advancement of science and learning must be convinced that the present isolation of both universities can lead to nothing but stagnation. Oxford especially, with its silent and all but deserted laboratories, could only gain by an accession of activity from the outside. Only thus indeed, only by having regular additions of fresh energy, can the place be kept sweet and wholesome; and if once this principle be accepted, as indeed it must be, and the sooner the better, there need be little difficulty in regulating its application. At present it would be difficult to calculate how much of the best intellectual energy of the country is wasted or misapplied, simply because there is no channel open by which it may be guided into the course in which it could do the best work.

There were several other subjects touched upon by the speakers at the University College dinner, to which we have not space to refer. Prof. Morley's tribute to the memory and the work of Mr. Carlyle was well-timed and appropriate, coming as it did just when the country was awed by its recent loss. Mr. Carlyle often said hard things of science, as he did of everything else under the sun. All the same, his methods and his philosophy were as scientific as they could well be, being simply his peculiar applications of the doctrine of the reign of inevitable law everywhere. Apart from this, and while we might disagree with everything he said and positively taught, it must be admitted that the inspiration of his teaching gave fresh energy and earnestness to scientific research, as it did to every other sphere of intellectual activity.

ATLAS OF HISTOLOGY

Atlas of Histology. By E. Klein, M.D., F.R.S., and E. Noble Smith, L.R.C.P., M.R.C.S. (London: Smith, Elder, and Co., 1880.)

MODERN histology is not yet fifty years old, but fifty years old in the nineteenth century means a great deal, and it is rather a matter of surprise that no English work entirely devoted to histology should have yet appeared than that we should be welcoming the largest and in some respects the most important illustrated work on that subject in this or any language.

That modern histology is most faithfully represented in the book before us becomes abundantly evident on looking at the figures and their description. We find the tissues and organs of the body delineated under every aspect and after every possible method of treatment; hardened with chromic acid, osmic acid, picric acid; stained with hæmatoxylin, carmine, aniline blue; submitted to the action of gold and silver salts and otherwise prepared *lege artis*. Of the value of these in elucidating structure there can be no question whatever, but at the same time we think it would have been well in a comprehensive work of this description had more space been given to the representation of the tissues in their living condition and unaltered by the action of reagents: the almost complete absence of allusion to and representation of the fresh tissues being a defect in the book.

Dr. Klein, in selecting the subjects for illustration, and Mr. Noble Smith in executing them, alike deserve high praise. Many of the figures are evidently as near an approach to facsimile of the preparations as can well be attained, and it need hardly be said that the preparations themselves, made as they are by so skilful a histologist, are as good in all probability of their kind as it is possible to make them.

In looking through the plates one is especially struck with the excellent manner in which the minute anatomy of the various organs is detailed, indeed the part of the work which relates to the structure of the viscera is in all respects better than that in which the simple tissues are dealt with. The illustrations of the latter are comparatively meagre, and in many cases too small, considering the size and aim of the work. This is very marked in the figures of the blood and in those of cartilage and osseous tissue, as well as in the illustrations of the structure of voluntary muscle. On the other hand, the development of bone is well and carefully represented, especially so far as the more intimate processes are concerned; but we miss the general features of bone-formation, such as the first calcification of the primitive cartilage bone, the periosteal irruption, and so on. The nervous tissue is also abundantly and beautifully illustrated, and here we are glad to observe that Dr. Klein has availed himself of the magnificent representations given by Key and Retzius in their monograph on the nervous system; representations that could scarcely have been improved upon, and to compete with which would have involved needless labour.

That the lymphatic system should occupy an important part of the work was to be expected from the fact that we already owe to Dr. Klein two monographs wholly devoted to that system, and from them, as well as from the plates in the "Handbook for the Physiological Laboratory," some delineations are here republished. With the exception of these and one or two other less important instances the figures throughout the book are new, and will no doubt for many years furnish a stock to which both teachers and authors may come for diagrams and illustrations.

As before remarked, the representations of the minute structure of the viscera are particularly good, and will prove useful in replacing many of the coarse and semi-diagrammatic figures which at present occupy a prominent place in the text-books of histology and physiology. We

may signalise those of the stomach and those of the kidney—the structure of the last-named organ being illustrated with particular minuteness. One is glad to think that one's examinations are over on finding that there are now no less than sixteen several named parts to be remembered in describing the course of a uriniferous tubule!

We have hitherto been writing as if the book before us were an Atlas of Plates and their description, and nothing more. This is emphatically not the case however, for the plates are accompanied by a text written by Dr. Klein, which forms a complete and independent compendium of the present state of histology, giving in plain terms and as briefly as is consistent with clearness, an account of the minute structure of each tissue and organ. In this account credit is given wherever possible to those to whom the discovery of new facts is due, but it is, we think, to be regretted that the references to the works in which the facts were published has not been added; such a notice of the literature of each subject would have been of much value.

At the end of the book a description of the appearances which are presented by nuclei in process of division will be found, embodying the results of the recent researches of Strasburger, Flemming, Mayzel, Klein, and others, results which have not unnaturally created a feeling of wonderment that in objects which have long engaged the special attention of histologists, changes of so marked a character should occur, and until now have wholly escaped observation.

We see that endothelium is still described as a tissue distinct from and indeed in contradistinction to epithelium, but it seems to be upon its last legs, for it now has to depend for existence upon a negative definition, and no longer presumes to base its claims to the place upon its developmental history.

There is a general tendency throughout the text to teach the subject somewhat dogmatically, and this, with the absence of detailed reference to literature, detracts from its value as a work of reference, while perhaps increasing its value as a text-book for students. Taking the work however as a whole it is not too much to say that it is in every way worthy of the high reputation of its principal author, and that its appearance, supplying as it does a want that has been long felt, will be welcomed by histologists both at home and abroad.

OUR BOOK SHELF

Urania: an International Journal of Astronomy. Edited by Ralph Copeland, Ph.D., and J. L. E. Dreyer, M.A.

THE first number of what is intended to be a high-class astronomical periodical, with the above title, has just appeared, and forms twenty-four pages demy quarto. It is proposed to issue it in numbers of from sixteen to twenty-four pages, whenever sufficient material offers, with shorter numbers when subjects of immediate interest require it. Papers will be accepted and printed in French, German, and Italian. This first number is well supported. It contains an article on the solution of Lambert's equation by Prof. Klinkerfues, and auxiliary tables for the calculation of occultations of stars by the moon, by Dr. C. Borgen. The Earl of Crawford and Balcarres contributes observations of comets 1880 *b*, *c*, and *d* made at Dunecht; the Earl of Rosse has a paper on determinations of lunar radiant heat during an eclipse; and Dr.

R. S. Ball communicates an investigation of the parallax of the star Groombridge 1618, which is No. 89 in Argelander's list of stars with large proper motions, the observations having been made at Dunsink in 1878-79: a parallax to the amount of a third of a second is indicated by the measures both of distance and position, so that, as Dr. Ball remarks, there is reason to consider Groombridge 1618 entitled to a place amongst the sun's nearest neighbours. Dr. Copeland has a note upon a nebula detected at Dunecht on the method of sweeping suggested by Prof. Pickering of Harvard College, U.S., which is termed "a new planetary nebula." The nebula however is not new; it was discovered several years since by Mr. S. C. Burnham with a refractor of 6-inches aperture, and was notified at the end of his third catalogue of new double-stars: it is referred to also in the notes to his observations of double-stars in 1877-78, in the *Memoirs* of the Royal Astronomical Society, vol. xlv. : he found it to be double, the distance between the centres of the two parts and a star of 9m. (which appears to be *Durch.* + 47°, No. 3289), being 27".3 at the epoch 1878.47. The double nucleus has also been remarked at Dunecht, and the measures of position and distance made there have a particular interest when compared with Mr. Burnham's in 1878; thus we have—

Burnham, 1878.476	...	Position, 88.5	...	Distance, 2.57
Dunecht, 1880.913	...	" 71.9	...	" 8.00

Such differences surely indicate rapid motion. Dr. Copeland does not allude to the star of about ninth magnitude distant less than half a minute of arc in 1878. This journal may be obtained by applying to Mr. J. L. E. Dreyer, Observatory, Dunsink, Co. Dublin.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

Infusible Ice

PROF. CARNELLEY'S directions in *NATURE*, vol. xxiii. p. 341, just received, for producing the hitherto fabulous commodity, "hot ice," have succeeded so much beyond our expectations for a first experiment in our College laboratory to-day, that the ease and simple means with which the experiment was performed, and the unaccountable and unaccustomed appearances which it presented, recommend it very strongly, as Prof. Carnelley remarks in his paper, and as I hope that the following description may also serve to prove, to other observers' trials and repetitions.

A 30 oz. flask of stout glass (made nearly as strong as the Carré decanters, for vacuum experiments) was tightly fitted, by forcing a two inch plug of large solid india-rubber tube placed round a tube into its mouth and firmly fixing it there with wire, with a delivery-tube of three-eighths of an inch large glass barometer-tube about two feet long. This tube was bent into an S-shape, and at the extreme end of the small U-part, which turned up, it was drawn out to a nearly capillary neck and bent over to communicate by india-rubber tubing through another similar flask surrounded by cold water to act as a condenser, with a Swan's aspirator giving a vacuum of twenty-eight inches by the action of the town water-supply. About 15 oz. of distilled water previously introduced was now boiled in the flask *in vacuo*, and distilled over, at a very gentle heat, into the second flask. After two or three hours' boiling the quantity of water in the flask was reduced to about 3 oz., and the capillary end of the tube was then sealed with a blowpipe. The flask thus exhausted makes an excellent water hammer and cryophorus, ringing with sharp raps when the water is shaken to and fro in it or in its tube. The least warmth of the flask, or cold applied to the U-part of the tube, suffices to collect there, by distillation, a quantity of beautifully clear water completely freed from air.